HEWLETT® PACKARD

HP KAYAK

HP Kayak XM600 Minitower

User's Guide

PC Workstations
High-Performance Desktops

HP Kayak XM600 Series 2 and HP Kayak XM600

This User's Guide covers the **HP Kayak XM600 Series 2,** equipped with socket-mounted processors. These PCs carry the model number P2190N and higher.

A separate User's Manual is available for the **HP Kayak XM600**, equipped with slot-mounted processors.

Each PC has a Support Label on its outer case clearly identifying the series to which it belongs. When looking at the PC from the front, the label is located on the right-hand side-panel, close to the bottom of the panel.

The Support Label states the Model, the Model Number and the Serial Number. The label includes the following information:

HP Kayak XM600
These PCs carry the model numbers Dxxxx (all) and Pxxxx up to P2189N.

or

HP Kayak XM600 Series 2
These PC carry the model numbers P2190N and higher.

User's Guide

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Notice

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Important Warnings

Avoid Electrical Shocks

WARNING To avoid electrical shock, do not open the power supply. There are no user-serviceable parts inside.

To avoid electrical shock and harm to your eyes by laser light, do not open the laser module. The laser module should only be serviced by service personnel. Do not attempt to make any adjustment to the laser unit. Refer to the label on the CD-ROM for power requirements and wavelength. This product is a class I laser product.

Electrical

WARNING For your safety always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with your national safety standards. This equipment can be disconnected from the power by removing the power cord from the power outlet. This means the equipment must be located close to an easily accessible power outlet.

Multimedia Models

WARNING If your PC is a multimedia model, or if you have installed an audio card in your PC, always turn the volume down before connecting the headphones or speakers. This avoids discomfort from unexpected noise or static. Listening to loud sounds for prolonged periods of time may permanently damage your hearing. Before putting on headphones, place them around your neck and turn the volume down. When you put the headphones on, slowly increase the volume until you find a comfortable listening level. When you are able to hear comfortably and clearly, without distortion, leave the volume in that position.

Removing and Replacing the Cover

WARNING For your safety, never remove the PC's cover without first removing the power cord from the power outlet and any connection to a telecommunications network. Always replace the cover before switching the PC on again.

Safety Information

WARNING There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn an old battery. Only replace the battery with the same or equivalent type, as recommended by the manufacturer. The battery in this PC is a lithium battery which does not contain any heavy metals. Nevertheless, in order to protect the environment, do not dispose of batteries in household waste. Please return used batteries either to the shop from which you bought them, to the dealer from whom you purchased your PC, or to HP so that they can either be recycled or disposed of in the correct way . Returned batteries will be accepted free of charge.

If you have a modem:

Do not attempt to connect this product to the phone line during a lightning storm. Never install telephone jacks in wet locations unless the telephone line has been disconnected at the network interface. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Use caution when installing or modifying telephone lines. Avoid using a telephone (other than a cordless type) during an lightning storm. There may be a risk from lightning.

Do not use the telephone to report a gas leak in the vicinity of the leak. Never touch or remove the communications board without first removing the connection to the telephone network.

Unpacking Your PC Workstation

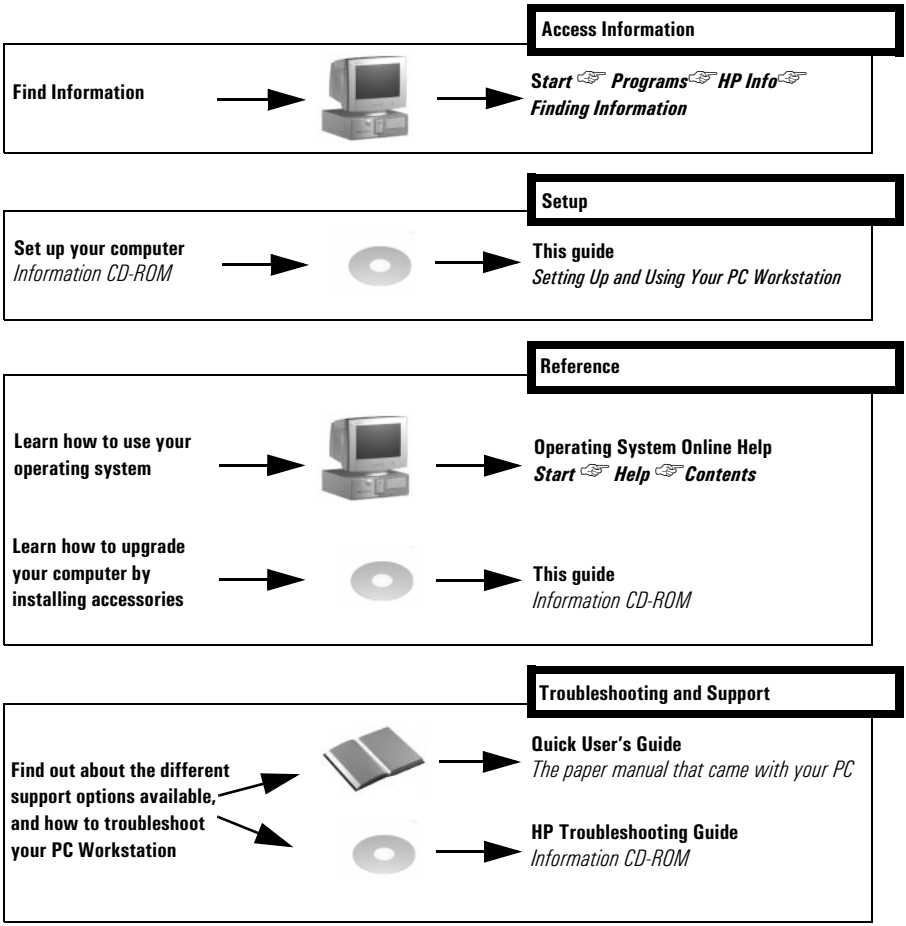
WARNING If you are in any doubt that you can lift the equipment safely, do not try to move it without help.

Static Electricity

CAUTION Static electricity can damage electronic components. Turn OFF all equipment. Don't let your clothes touch the accessory. To equalize the static electricity, rest the accessory bag on top of the PC Workstation while you are removing the accessory from the bag. Handle the accessory as little as possible and with care.

PC Workstation Documentation Roadmap

If you want to ...


Access Information
Find Information
Start ☞ Programs ☞ HP Info ☞ Finding Information
Setup
Set up your computer
Information CD-ROM
This guide
Setting Up and Using Your PC Workstation
Reference
Learn how to use your operating system
Operating System Online Help
Start ☞ Help ☞ Contents
Learn how to upgrade your computer by installing accessories
This guide
Information CD-ROM
Troubleshooting and Support
Find out about the different support options available, and how to troubleshoot your PC Workstation
Quick User's Guide
The paper manual that came with your PC
HP Troubleshooting Guide
Information CD-ROM

On HP's Web Site

The HP web site contains a wide range of information, including downloadable documentation, service and support options, and the latest versions of drivers and utilities.

Downloadable Documentation from HP's Web Site

HP's web site lets you download additional documentation for your PC Workstation. This documentation is provided in Adobe Acrobat (PDF) format.

The documentation for your PC Workstation is available free of charge on the HP web site: **`http://www.hp.com/go/kayaksupport,`** then select HP Kayak XM600 from the drop-down menu.

This includes:

- Troubleshooting Guide — provides troubleshooting information.
- Technical Reference Manual— provides detailed information about your PC Workstation, including system board switches, IRQs, DMAs, and I/O Addresses.
- Service Handbook — provides information on replacement parts, including HP part numbers.

NOTE To view and print the above guides, you need to have Adobe's Acrobat Reader installed on your PC Workstation. You can download it free of charge from Adobe Systems Incorporated web site: **`www.adobe.com`** or from the HP Kayak web site.

Information on Ergonomic Aspects

It is strongly recommended that you read the ergonomics information before using your PC Workstation.

Basic ergonomics information is available in the *Quick User's Guide* (provided with your PC Workstation).

You can access more extensive ergonomics information from your PC by clicking the **Start** button, and then **Programs** ➪ **HP Info** ➪ **Working in Comfort**, or by connecting to HP's web site **`ww.hp.com/ergo`**.

Technical Information

Physical characteristics (standard configuration as shipped)

Characteristics:	Description:
Weight (excl. keyboard and display)	14.4 kilograms (31.68 pounds).
Dimensions	47.0 cm max. (D) by 21,0 cm (W) by 49.0 cm (H) (18.50 inches by 8.26 inches by 19.29 inches).
Footprint	0.09 m^2 (1.06 sq ft).
Storage temperature	-40 °C to 70°C (-40 °F to 158 °F).
Storage humidity	8% to 85% (relative).
Operating temperature	10 °C to 35 °C (50 °F to 95 °F).
Operating humidity	15% to 85% (relative).
Acoustic noise emission (ISO 7779): • Operating (typical	LWa < 42 dBa For more information on acoustic data, refer to the PC workstation's data sheet on HP's website at: `http://www.hp.com/desktops/kayak`
Power supply	• Input voltage: 100 - 127, 200 - 250 V (switch select) • Input frequency: 50/60 Hz • Maximum output power: 320 W continuous • The maximum supported power consumption per PCI accessory slot is 25 W, either from the 5 V or the 3.3 V supply and must respect the electrical specification of the PCI 2.2 specification. Total power consumption for the PCI slots must not exceed 75 W. • The maximum power consumption tolerated in the AGP PRO slot is limited to 50 W.

NOTE

When the computer is turned off with the power button on the front panel, the power consumption falls below 5 Watts, but is not zero. The special on/off method used by these computers considerably extends the lifetime of the power supply. To reach zero power consumption in "off" mode, either unplug the power outlet or use a power block with a switch.

1

Setting Up and Using Your PC Workstation

WARNING If you are in any doubt that you can lift the PC Workstation and monitor safely, do not try to move them without help.

1 When you receive your PC Workstation, unpack all of the components.

2 Place the PC Workstation on a sturdy desk with easily accessible power outlets and enough space for the keyboard, mouse, and any other accessories.

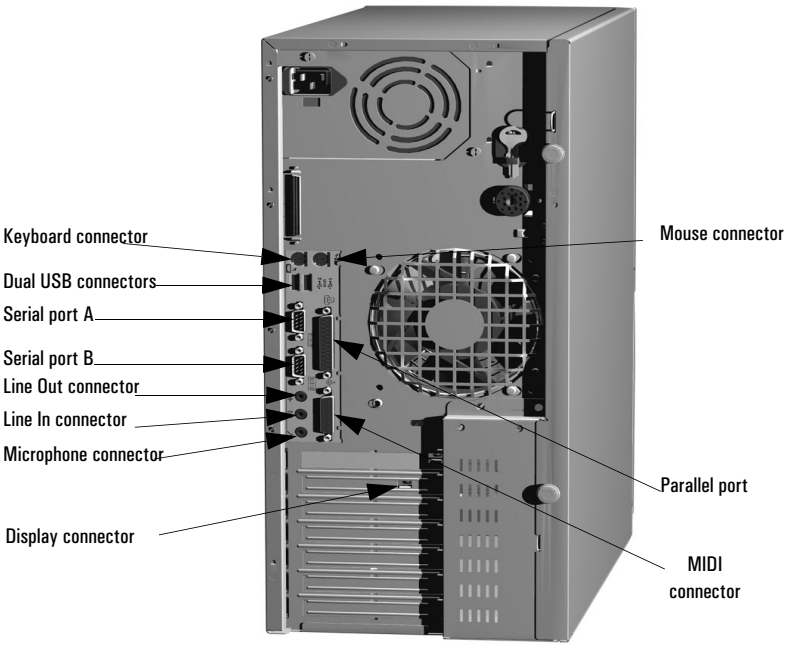
3 Position the PC Workstation so that its rear connectors are easily accessible.

Installation Tools

No tools are required to install your PC Workstation. However, if you plan to install an accessory board inside your PC Workstation, you will need a flat-blade screwdriver. For more information on installing accessories, refer to "Installing and Replacing Hardware Parts in Your PC Workstation", on page 22.

Connecting Devices

For your own safety, it is recommended that you first read the warning notices on pages 6 and 7.



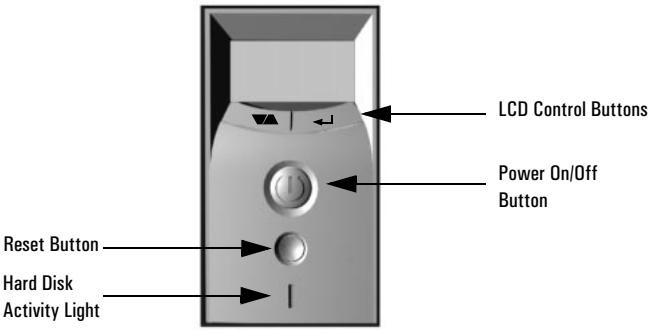
NOTE

Universal Serial Bus (USB). Connectors can be used for USB accessories. (For information about HP accessories, connect to HP's web site **www.hp.com/go/pcaccessories**.) Most USB accessories are automatically configured as soon as they are physically attached to the PC Workstation. USB accessories are not supported by all operating systems.

Line Out Jack. The internal audio speaker is deactivated when you use the Line Out jack. External speakers should have a built-in power supply.

The MaxiLife Status Panel

The MaxiLife panel is located on the front of your PC Workstation.



HP MaxiLife and its Liquid Crystal Display (LCD)

HP MaxiLife and its LCD screen helps you diagnose problems with your PC Workstation and provides system information you may need to obtain support. Press one of the LCD control buttons to display the menu. Use ▼▲ to scroll through the menu items and ↵ to select the item required. For more information on using the LCD, refer to “Using HP MaxiLife to Diagnose Problems” on page 54.

Hard Disk Activity Light

This light flickers when your hard disk drive is being accessed.

Starting and Stopping Your PC Workstation

Starting Your PC Workstation for the First Time

If your PC Workstation has preinstalled software, it is initialized the first time you start the PC Workstation. The software initialization process takes a few minutes. This process sets up the software in your language and sets up your software to use the hardware installed in your computer (you can change the settings after the software has been initialized).

Starting Your PC Workstation

1 Before you start your PC Workstation, first switch on the display.

2 Start your PC Workstation in one of these ways:

- Press the power button on the front panel.
- Press the keyboard space bar (multimedia models only).
  The keyboard power-on feature will work only if the appropriate system board switch is set (the default setting is enabled).

When you switch on the computer, it carries out the Power-On-Self-Test (POST) while the PC Workstation's logo is displayed. If you wish to view the details of this test, press the ***Esc*** key. If there is an error in the POST, the error will automatically be displayed.

3 If you have set a password in the PC Workstation's *Setup* program, the password prompt displays after the POST has completed. If the Password prompt is displayed, type your password and press ***Enter*** to be able to use the PC Workstation.

Initializing Your Software

NOTE Do NOT switch OFF the PC Workstation while the software is being initialized—this could cause unexpected results.

To initialize your software:

1 Turn on the display first, then the PC Workstation.

When the PC Workstation is switched on, the HP PC Workstation's logo is displayed. The PC Workstation performs a Power-On-Self-Test (POST).

2 The software initialization process starts. It displays the software license agreement, gives you an opportunity to read Working in Comfort (ergonomics advice for computer users), then asks questions about the PC Workstation.

3 While the initialization process is running, you can complete the Warranty Registration card that came with this manual.

4 When the initialization process has finished, click OK and the PC Workstation will restart.

Creating an Emergency Repair Disk

During the initialization of your software, it is very important that you create an Emergency Repair Disk for the operating system, when prompted. HP recommends that you use new diskettes for this purpose.

For more information on how to create these diskettes, refer to the documentation that came with your application software or operating system.

Stopping Your PC Workstation

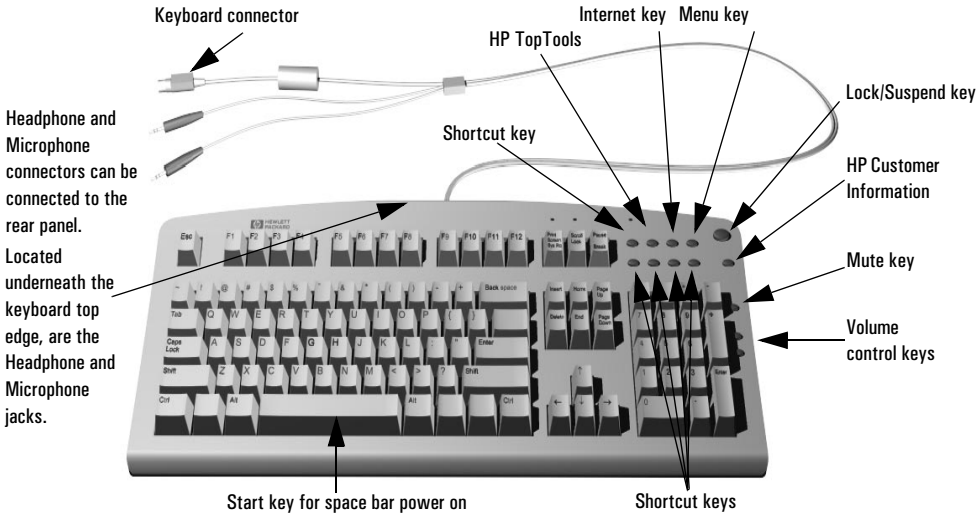
To stop the PC Workstation, first make sure that you have exited all applications and then use the shutdown command in the **Start** menu. When prompted, press the power button on your PC Workstation's control panel.

CAUTION Do not power off using the power button until prompted to do so otherwise you may lose any unsaved data from open applications.

Using Your HP Enhanced Multimedia Keyboard (some models only)

The HP enhanced keyboard includes soft keys you can use to:

- Display and configure the actions assigned to keys.
- Perform one-touch shortcuts to start applications, open files, or open web sites on the Internet.
- Launch the Internet browser supplied with your system.
- Lock or suspend your PC Workstation.
- Access HP TopTools and customer information.
- Mute or adjust the volume of the audio system.
- A headphone and microphone can be connected directly to the keyboard. For this option to work, the headphone and microphone connectors must be connected to their associated rear panel jacks.


Keyboard connector
Internet key
Menu key
HP TopTools
Lock/Suspend key
Headphone and Microphone connectors can be connected to the rear panel.
Shortcut key
HP Customer Information
Located underneath the keyboard top edge, are the Headphone and Microphone jacks.
Mute key
Volume control keys
Start key for space bar power on
Shortcut keys

Menu Key

Pressing the "**?**" Menu soft key displays the soft key section of the HP enhanced keyboard control panel on your screen. Click any of the keys on the screen to display the action assigned to an individual key or to change or assign an action to a key. Shortcut keys are provided specifically for user-defined actions.

Viewing the HP Summary Screen

The HP Summary Screen gives you a summary of the current configuration of your PC Workstation (for example: BIOS version, CPU speed, memory module size, and installed mass storage devices).

It is recommended that you check the configuration of your PC Workstation when you first use it and each time after you install, remove, or upgrade accessories. To check the configuration:

1 Turn on the display and then the PC Workstation. If the PC Workstation is already turned on, save your data and exit all programs, then restart the PC Workstation. Consult your operating system documentation for any special instructions concerning turning off and restarting your PC Workstation.

2 When the start-up logo appears on your display, press **Esc**. This takes you to the HP Summary Screen. (To go immediately into the *Setup* program, and bypass the Summary Screen, press **F2** instead of **Esc**). The Summary Screen is displayed for only a short time.

Using the HP *Setup* Program

Use the *Setup* program to configure your PC Workstation (for example: setting up system and user passwords, installing and upgrading mass storage devices), and to solve configuration problems.

It is recommended that you take note of any changes to the system setup.

Starting the HP *Setup* Program

1 Turn on the display and then the PC Workstation. If the PC Workstation is already turned on, save your data and exit all programs, then restart the PC Workstation.

2 Press **F2** while **F2 Setup** is displayed at the bottom of the screen. If you fail to press **F2** in time and the start-up process continues, you will need to restart your PC Workstation and go through the POST again so you can press **F2**.

The opening screen of the PC Workstation's *Setup* program is displayed. The Main Menu presents a list of fields, for example, the installed BIOS version or Date and Time.

A band along the top of the screen offers a list of menus. A menu is selected by using either the left or right arrow keys.

Main Menu

The Main Menu presents a list of fields, for example, the installed BIOS version; "PnP" (selects whether the BIOS or a Plug and Play operating system such as Windows 95 configures devices); "Reset Configuration Data"; "System Time"; "System Date"; "Key Click"; "Key Auto-Repeat Speed"; Delay Before Auto-Repeat" and "NumLock at Power-on". By default the "Reset Configuration Data" item is set to No. Selecting Yes will clear the system configuration data and return to the default settings.

Advanced Menu

The Advanced Menu offers a list of sub-menus allowing you to:

- Configure memory caching, USB ports, Integrated I/O Ports and Integrated Audio Devices;
- Enable floppy disk drives, IDE devices (Primary and Secondary);
- PCI Devices.

Security Menu

Sub-menus are presented for changing the characteristics and values of the System Administrator Password, User Password, Power-on Password, Fixed Disk Boot Sector and for preventing unauthorized start-up from the Floppy, CD-ROM and IDE-HDD drives (refer to “Setting Passwords in the HP Setup Program” on page 20).

Boot Menu

Select the order of the devices from which you want the BIOS to attempt to boot the operating system. The QuickBoot mode option allows the system to skip certain tests while booting. This decreases the time needed to boot the system.

Power Menu

The Modem Ring option allows you to enable or disable the system to return to full speed when an IRQ is generated, while the Network Interface option enables the system to return to normal speed when a specific command is received by the network interface.

Standby Delay (slows down the processor) and Suspend delay (saves a maximum of energy) options are only relevant for the Windows 95 SR2.1 operating system. Use these options to set a period of inactivity before the system goes into one of the selected modes.

NOTE

Setup changes system behavior by modifying the power-on initialization parameters. Setting incorrect values may cause system boot failure. Should this occur, press **F9** to load the *Setup* default values to recover.

Setting Passwords in the HP *Setup* Program

You can set passwords to provide different levels of protection for your PC Workstation, the Administrator password, the User password and the Power-on password. You set these passwords using the **Security** menu in the *Setup* program.

The Administrator can access and change all settings in the *Setup* program, while the User can only access and modify certain items in the Main menu.

When the Power-on Password option is enabled, you need to enter a password every time you boot the PC. Either the Administrator or User Password can be used.

Setting a Password

To set a password:

1 Start the *Setup* program

2 Select the **Security** menu.

3 Select the **Administrator** or **User** password submenu.

4 Choose the **Set Administrator** or **User password** setup item. You will be asked to enter your password twice.

To enable the Power-on Password, select the **Enabled** setup item.

5 To save your changes and exit the *Setup* program press **Esc** or select **Exit Menu**, then **Exit Saving Changes**.

To remove the password, follow the same procedure as to set a password. You will be asked to enter the existing password first. Then, for the new password, leave the password field blank and press **Enter**. To confirm your choice, press **Enter** a second time.

Using Power Management

Power management enables you to reduce the PC's overall power consumption by slowing down the PC's activity when it is idle. For more information on power consumption data, refer to the PC Workstation's data sheet on HP's web site at: **http://www.hp.com/desktops/kayak**.

Operating System

Operating systems differ in their power management capabilities. Refer to your operating system documentation for more information.

Manageability

Your PC is highly manageable. HP TopTools is a device management tool that can help you in troubleshooting and makes remote administration easier. For more information about TopTools, connect to HP's web site at: **www.hp.com/toptools.**

Software and Drivers

In the "Software and Drivers" section of the HP support site **www.hp.com/go/kayaksupport**, you can download the latest drivers and BIOS for your PC Workstation.

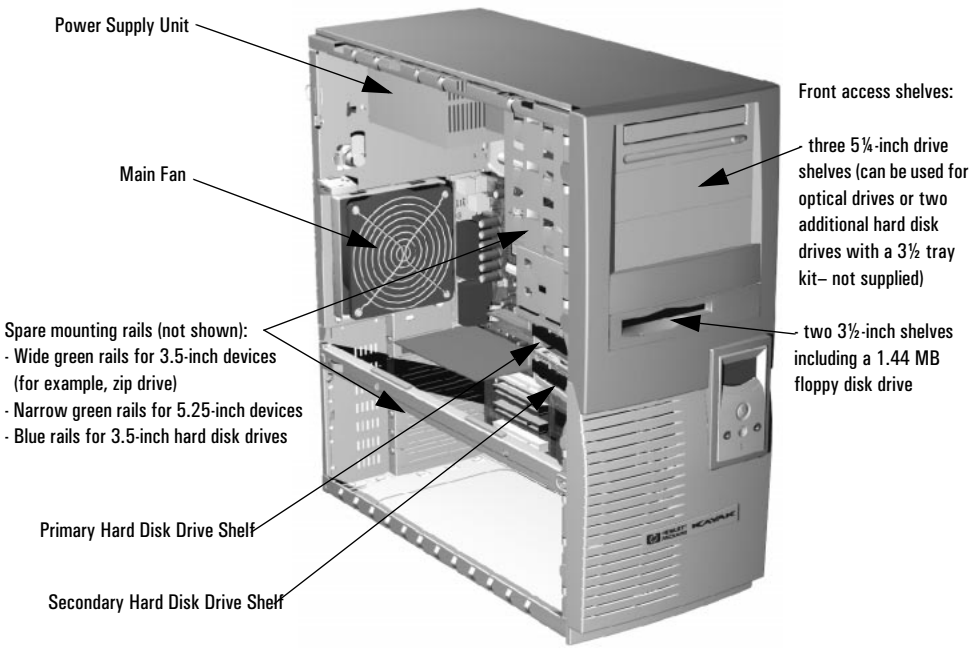
You can also register to obtain information on new driver availability automatically.

Contact your dealer for an up-to-date list of supported devices or check the HP web site: **http://www.hp.com/go/kayak**.

2

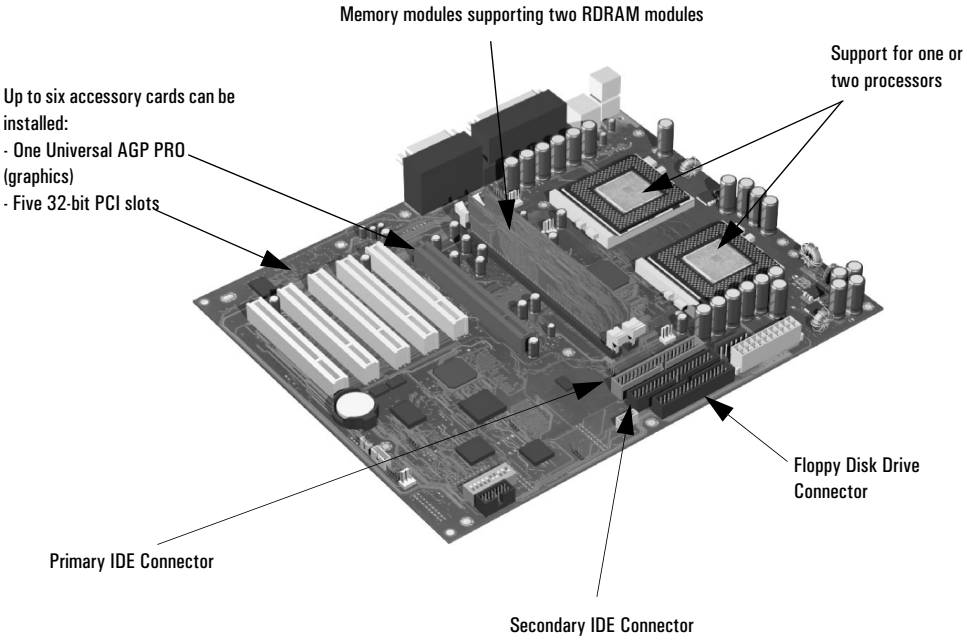
Installing and Replacing Hardware Parts in Your PC Workstation

This chapter provides information about installing accessories and replacing hardware parts in your PC Workstation.


Power Supply Unit
Main Fan
Spare mounting rails (not shown):
- Wide green rails for 3.5-inch devices (for example, zip drive)
- Narrow green rails for 5.25-inch devices
- Blue rails for 3.5-inch hard disk drives
Primary Hard Disk Drive Shelf
Secondary Hard Disk Drive Shelf
Front access shelves:
three 5¼-inch drive shelves (can be used for optical drives or two additional hard disk drives with a 3½ tray kit– not supplied)
two 3½-inch shelves including a 1.44 MB floppy disk drive

Contact your dealer for an up-to-date list of supported devices or check the HP web site: **`http://www.hp.com/go/kayak`**.

HP Kayak XM600 PC Workstation System Board


Memory modules supporting two RDRAM modules
Support for one or two processors
Up to six accessory cards can be installed:
- One Universal AGP PRO (graphics)
- Five 32-bit PCI slots
Floppy Disk Drive Connector
Primary IDE Connector
Secondary IDE Connector

Removing and Replacing the Cover and Front Bezel

Removing the Cover

For your own safety, it is recommended that you first read the warning notices on pages 6 and 7.

1 Switch off the display and computer. Disconnect all power cables and any LAN or telecommunications cables.

2 Unscrew the two thumb screws located at the back of the PC Workstation.

3 Standing at the back of the PC Workstation, slide the cover towards you until it clicks into place.

4 Tilt the cover sidewards, then lift off the PC Workstation chassis.

Removing the Front Bezel

If required, remove the front bezel. This bezel is divided into two sections:

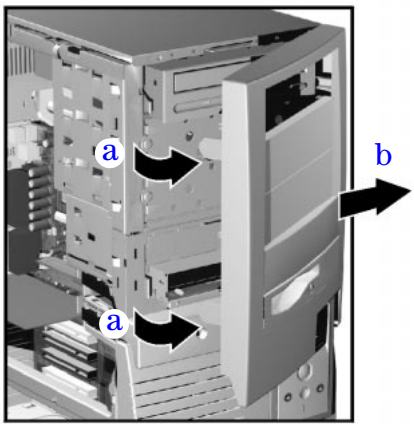
- The upper bezel (blue) gives access to three 5.25-inch shelves and two 3.5-inch shelves.
- The lower bezel (grey) gives access to the control panel. To access the lower bezel, you must first remove the upper bezel.

NOTE Take care when removing the upper and lower bezels. They are not on a hinge — do not force them open.

To remove the upper and lower bezels:

a Unclip the two clips located on the left-hand side of the bezel.

b Open the bezel slightly, and then gently push it outwards.



Replacing the Cover and Front Bezel

1 Ensure that all internal cables are properly connected and safely routed.

2 If necessary, replace the front bezel. To do this, ensure that the bezel is correctly orientated, align the two plastic tabs with their slots on the right-hand side of the chassis, and then close the bezel. If you have removed both sections of the front bezel, first replace the lower bezel.

3 Standing at the back of the PC, lower the cover onto the chassis (aligning the guide rail on the bottom inside edge of the cover with the bottom edge of the PC chassis).

4 Shut the cover ensuring that the guides on the top of the cover slide into the rails at the top of the chassis.

5 Slide the cover forwards, then tighten the two thumbscrews.

6 If required, lock the cover using the key provided. Reconnect all the power and telecommunications cables.

Replacing or Installing a Processor

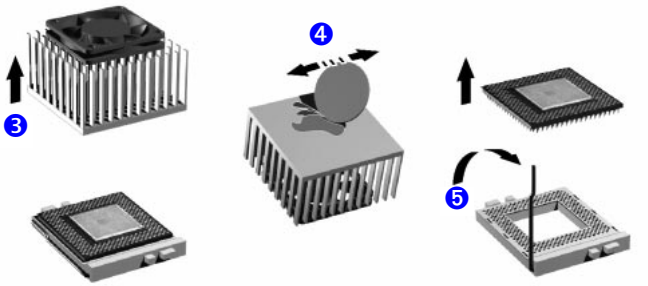
Single-processor systems can be upgraded to dual-processor systems by installing a second processor in the vacant processor socket. The second processor must be of the same specification (type, speed and level-2 cache memory capacity) as the existing processor.

Removing an Existing Processor

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions):

3 If present, remove the heatsink fan's power connector from the system board, then remove the heatsink. You may need to use a tool to remove release the spring retaining clip(s) holding the processor in place.



4 Remove the thermal bonding material from the underside of the heatsink. You may need to scrape the material with an object such as a coin to remove all traces of the old thermal interface.

5 Lift the Zero Insertion Force (ZIF) lever, located at the side of the processor socket, until it is in the vertical position to release the pins of the processor in the socket base. Lift out the processor carefully. To avoid bending the processor pins, keep the body of the processor as much as possible in the plane horizontal to the main board when removing it.

6 Store the processor you have removed in an anti-static bag (for example, the one provided with the replacement processor).

Installing a Processor

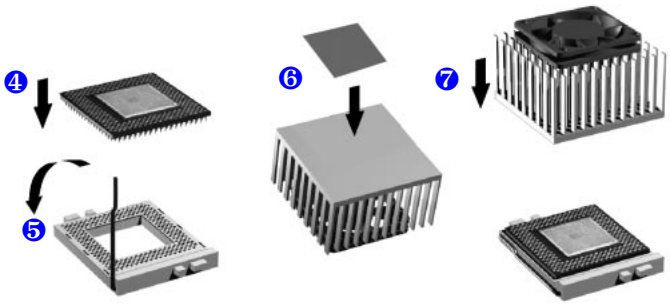
If you are installing a replacement processor, proceed directly to step 4.

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions).

3 Locate the second processor socket marked CPU 2 on the system board. Lift the ZIF lever and remove the processor terminator from the CPU 2 socket. Store the terminator in a safe place.

4 Insert the new processor carefully, with the Zero Insertion Force (ZIF) lever in the open position vertical to the main board. Ensure the processor orientation is correct - it can go in one way only. No force is required to insert the processor, if the pins are undamaged it should drop into place easily.



5 When the processor is fully inserted, close the ZIF lever until it is horizontal to the main board and clips alongside the socket base. This clamps the processor pins in place.
If you have a device installed in the lower CD-ROM drive shelf, you should verify that it will not interfere with the new processor.

6 Affix the new thermal interface material (sticker or polymer, provided with the new processor) to the underside of the heatsink.

7 Attach the heatsink to the processor using the spring retaining clips to hold the heatsink in firm contact with the processor. If your heatsink has a fan, connect it to the corresponding connector on the system board, these are marked CPU_FAN1 and CPU_FAN2 for the first and second processor sockets respectively.

8 Replace the PC Workstation's cover (refer to page 24 for instructions). Reconnect all the power and telecommunications cables.
When the PC Workstation is started, you should check that the processor has been correctly identified (refer to "Viewing the HP Summary Screen" on page 17).

To make the most of your dual processor configuration, you will need to configure your operating system (refer to "Configuring the Operating System for use with Dual Processors" on page 28).

Configuring the Operating System for use with Dual Processors

Configuring Windows 2000

To obtain the full benefits of a dual processor configuration you will need to configure Windows 2000 as follows:

1. Click on **Start**, **Settings** then **Control Panel**.
2. In the **Control Panel** window, double-click on **Administrative Tools**.
3. In the Administrative Tools window, double-click on **Computer Management**.
4. In the left section of the Computer Management window under the System Tools section, click on **Device Manager**.
5. In the right section of the Device Manager window, double-click on **Computer** then double click on **ACPI Uniprocessor PC**.
6. In the Properties window that appears, click on the **Driver** tab and click on the **Update Driver** button.
7. Click on **Next** to begin the **Upgrade Device Driver Wizard**. In the next window, select **Display a list of known drivers** then click on **Next** to continue.
8. In the next window, select **Show all hardware of this device class** and in the **Manufacturers** section, select **[Standard computers]** and in the **Models** section, select **ACPI Multiprocessor PC** then click on the **Next** button.
9. Click on **Next** to install the driver and when this is complete, click on **Finish**. Close all open windows and restart your PC when prompted. After restarting, Windows 2000 will make full use of your new dual processor configuration.

Configuring Windows NT 4.0 using HP DualExpress!

Included with the HP Processor Accessory is the HP DualExpress! application. This application is to be used when upgrading Windows NT 4 from a single-processor to a multi-processor system.

NOTE Do not use the HP DualExpress! application when upgrading Windows 2000 from a single-processor to a multi-processor system.

Using an installation Wizard, HP DualExpress! guides you through the operating system upgrade and will take approximately five minutes.

Launching HP DualExpress!

The second processor must be installed and the PC booted. For now, Windows NT will still only recognize the original processor. Insert the HP DualExpress! floppy disk in the floppy disk drive and follow the instructions. When the upgrade is complete, the system reboots. This time a multi-processing system is recognized.

Removing, Replacing and Upgrading Memory

NOTE

Use only HP memory modules specifically designed for your PC model. To find out about available accessories for your PC, refer to the HP Accessories Web site at: **`http://www.hp.com/go/pcaccessories`**.

Upgrading Memory

The HP Kayak XM600 PC Workstation supports up to two RAMBUS Direct RAM (RDRAM) memory modules.

If only one RDRAM module is installed, it must be installed in the socket nearest the processor(s). The unused memory socket ***must*** contain a continuity module.

Removing and Installing a Memory Module

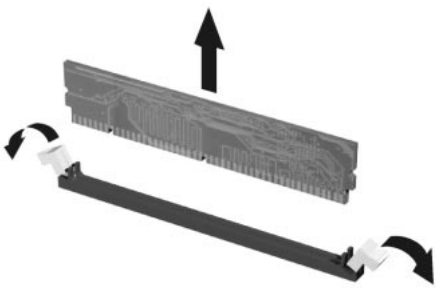
Installing or Replacing a Memory Module

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions).

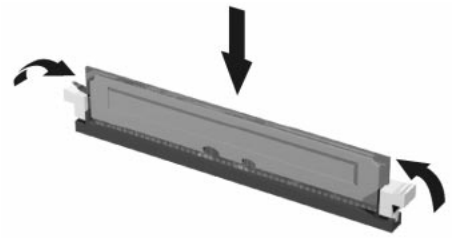
To ease installation, place the PC on its side with the system board facing upwards.

3 If you are installing an additional memory module then you will need to remove the continuity module. Open the two retaining clips and remove the continuity module from the socket.
If you are replacing an existing memory module then open the two retaining clips and remove the existing memory module the socket.



Always store any removed memory or continuity module in a safe place for future use.

4 Install your new memory module, ensuring that the two notches on the bottom edge of the memory module are aligned with those of the socket. With the two retaining clips open, press the memory module ***fully*** into the socket until the retaining clips click into position.



5 Replace the PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

6 Check the HP Summary Screen to verify the new configuration (refer to "Viewing the HP Summary Screen" on page 17).

Removing and Replacing an Accessory Card

The HP Kayak XM600 has five 32-bit 33 MHz, 5 V PCI accessory card slots and one Universal AGP PRO slot on the system board.

HP Kayak XM600 Minitower models support the following AGP video cards:

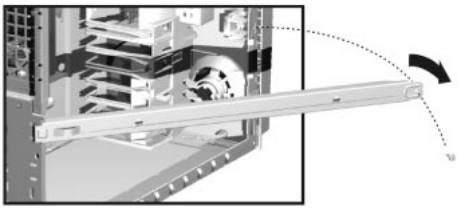
- AGP video cards (≤ 25W)
- AGP PRO video cards (≤ 50W)

It does not support high power (>50W) AGP PRO video cards.

To remove or install an accessory card, complete the following steps:

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions).



3 If you are removing an existing AGP video card, you may need to remove the chassis bar and the video card retaining mechanism (if fitted) to improve access to the AGP PRO slot.

4 If you are installing a new accessory card, unscrew and remove the slot panel. Store it in a safe place. If the slot cover is tight, loosen the screws on the adjacent slots.
If you are replacing an existing accessory card, remove any cables connected to the accessory card. Remove the screw that holds the old card in place and carefully pull it out.

NOTE Some cards may have preferred locations and special installation instructions detailed in their manuals.

5 Aligning the new card carefully, slide it into position, then press it firmly into the slot and tighten the retaining screw.

6 If you are installing an AGP graphics card, you might need to adjust the special card retaining mechanism (if fitted) to firmly hold your card in place during transit and normal operation.

7 Install any other accessories before replacing the cover (refer to page 25). Reconnect all cables and power cords.

Installing Mass Storage Devices

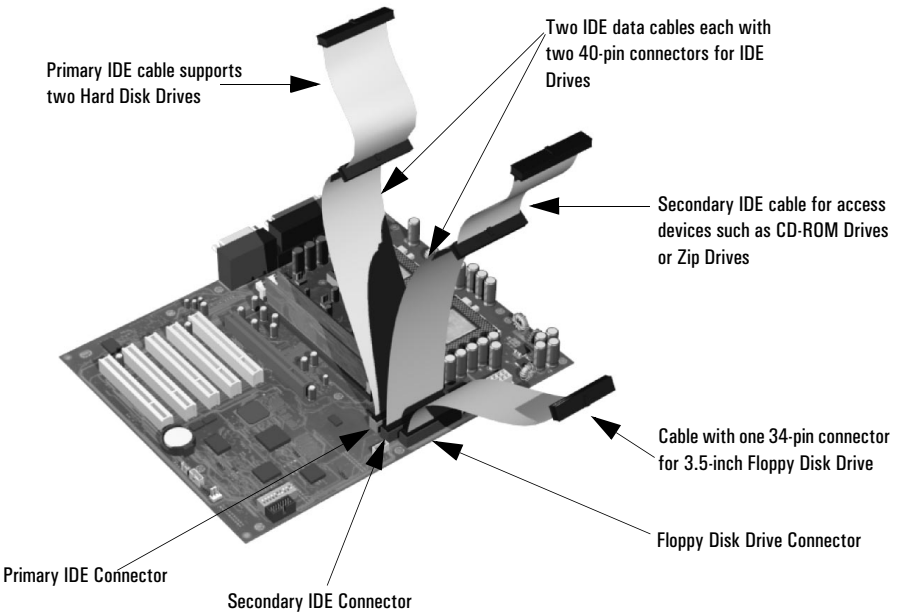
The PC has an integrated Ultra ATA-66 controller that supports up to four IDE devices. Removable media IDE devices, such as CD-ROM drives, DVD drives, tape drives and Zip drives, require front access. In addition to the floppy disk drive, your PC can support another 3.5-inch device plus three front-access 5.25-inch devices. Note that one front-access shelf may already have a CD-ROM drive installed in it.

You can physically install up to four hard disk drives in the minitower chassis. The internal hard disk shelves support up to two 15K RPM drives. You can install two other 10K RPM hard drives in the 5¼ inch bays using a hard drive tray kit (must be ordered separately).

Refer to the drive's manual to see if you must set jumpers or if there is a special installation procedure to follow.

Cables and Connectors (all models)

If you add an IDE Zip drive, hard disk drive, DVD drive, CD-ROM drive, CD-RW drive, or tape drive, you need to connect it to power and data cables. The data cables and connectors provided are shown below.


Primary IDE cable supports two Hard Disk Drives
Two IDE data cables each with two 40-pin connectors for IDE Drives
Secondary IDE cable for access devices such as CD-ROM Drives or Zip Drives
Cable with one 34-pin connector for 3.5-inch Floppy Disk Drive
Floppy Disk Drive Connector
Primary IDE Connector
Secondary IDE Connector

Which IDE Data Connectors to Use

There are three data cables inside your PC Workstation (SCSI models have an additional cable and connectors, refer to "Cables and Connectors (SCSI Models)" on page 34). Two of these are for IDE devices.

- The ATA IDE cable supports two IDE devices. This cable is connected to the Primary IDE connector on the system board. The bootable hard disk drive is connected to this cable via the MASTER connector. A second hard disk drive could be installed by using the SLAVE connector.
- A second IDE drive cable supports two IDE devices. If you install a CD-ROM drive, a DVD drive or a Zip drive, connect it to this cable.
- The third cable has one connector for a floppy drive.

The following table explains which data connectors you should use when you install additional devices.

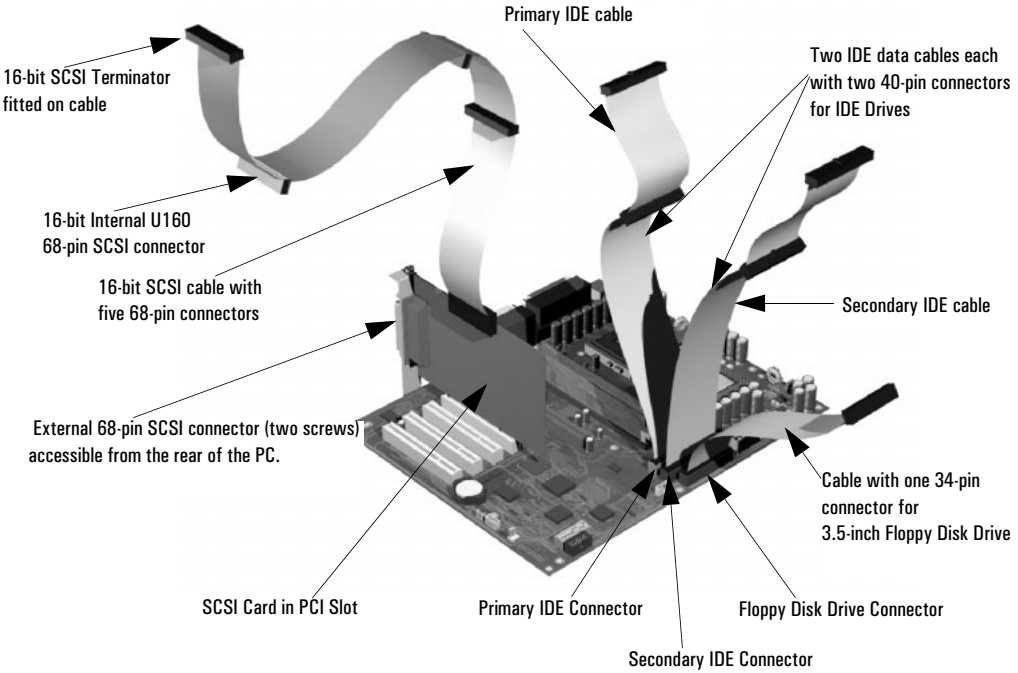
Examples of multiple IDE drive combinations

Configuration	Connections to data cables	
1 Hard disk drive 1 CD-ROM drive	1. Bootable hard disk drive: 2. CD-ROM drive:	Master connector, Primary IDE Cable Master connector, Secondary IDE Cable
2 Hard disk drives 1 CD-ROM drive	1. Bootable hard disk drive: 2. Second hard disk drive: 3. CD-ROM drive:	Master connector, Primary IDE Cable Slave connector, Primary IDE Cable Master connector, Secondary IDE Cable
1 Hard disk drive 1 CD-ROM drive 1 Zip drive	1. Bootable hard disk drive: 2. CD-ROM drive: 3. Zip drive:	Master connector, Primary IDE Cable Master connector, Secondary Cable Slave connector, Secondary IDE Cable
2 Hard disk drives 1 CD-ROM drive 1 Zip drive	1. Bootable hard disk drive: 2. Second hard disk drive: 3. CD-ROM drive: 4. Zip drive:	Master connector, Primary IDE Cable Slave connector, Primary IDE Cable Master connector, Secondary IDE Cable Slave connector, Secondary IDE Cable
1 Hard disk drive	1. Bootable hard disk drive:	Master connector, Primary IDE Cable
2 Hard disk drives	1. Bootable hard disk drive: 2. Second hard disk drive:	Master connector, Primary IDE Cable Slave connector, Primary IDE Cable

Before Installing an IDE Hard Disk

Refer to the drive's installation guide to check jumper settings or if there is a special installation procedure to follow.

Cables and Connectors (SCSI Models)


Primary IDE cable
16-bit SCSI Terminator fitted on cable
Two IDE data cables each with two 40-pin connectors for IDE Drives
16-bit Internal U160 68-pin SCSI connector
16-bit SCSI cable with five 68-pin connectors
Secondary IDE cable
External 68-pin SCSI connector (two screws) accessible from the rear of the PC.
Cable with one 34-pin connector for 3.5-inch Floppy Disk Drive
SCSI Card in PCI Slot
Primary IDE Connector
Floppy Disk Drive Connector
Secondary IDE Connector

Which SCSI Connectors to Use

Models with a SCSI card can be connected to up to five internal SCSI devices.

If all the internal SCSI connectors are used, additional devices can be added outside the PC by connecting directly to the rear panel SCSI connector. The external connector allows up to ten external devices to be connected. This gives a maximum of 15 (internal + external) devices that can be connected.

NOTE

The total length of the external SCSI cables should not exceed 3 meters (approximately 10 feet).

Before Installing a SCSI Hard Disk

If you are installing an additional SCSI drive, **you should assign an unused SCSI ID to this accessory.** SCSI IDs range from 0 to 15 for wide 16-bit SCSI.
SCSI ID 0 is used by the first SCSI hard disk drive and SCSI ID 7 is reserved for the integrated SCSI controller (the default for narrow and wide SCSI devices).

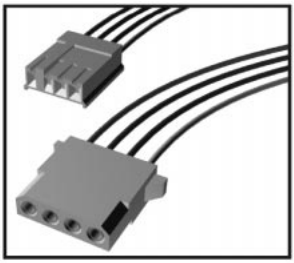
You should assign an unused SCSI ID to the second SCSI hard disk drive (for example, SCSI ID 1).

The SCSI ID is usually configured with jumpers on the SCSI hard disk drive. Refer to the installation guide supplied with the drive for information on selecting a SCSI ID.

Some internal SCSI disk drives may have termination resistors that must be removed or disabled before installation in your computer. Refer to the drive's installation guide for more details and to see if there is a special installation procedure to follow.

Power Connectors

Power Cable for 3.5-inch Floppy Disk Drive



Power Cables for Hard Disk Drives, Zip Drives, Tape Drives, CD-RW, CD-ROM Drives and DVD drives

Additional Guide Rails

Guide rails are supplied for the installation of additional mass storage devices. These are inside the PC Workstation, four pairs attached on the side of the front access bays and one pair on the chassis bar. Depending on the device to be installed, dedicated guide rails are required and are easily recognized by their distinct shape, markings and color.

The following table indicates the device, location, and required rails.

Device to be Installed	Location	Required Rails
3½-inch device (2nd hard disk drive)	3½-inch internal shelf	Blue left and right rails (L or R indicated on the rail)
3½-inch device (zip drive or second floppy disk drive)	3½-inch front access bay	Wide green rails (L or R **not** indicated on the rail)
5¼-inch device (CD-ROM, etc.)	5¼-inch front access bay	Narrow green rails (L or R indicated on the rail)
3½-inch device (3rd or 4th hard disk drive)	5¼-inch front access bay	Use separate HDD mounting kit.

Removing and Replacing the Primary Hard Disk Drive

CAUTION

Handle the hard disk drive with care. Avoid shocks and violent movement as this can cause damage to the hard disk drive's internal components.
Make sure that you back up your files before you install a hard disk drive. Refer to your operating system documentation for information on how to do this.

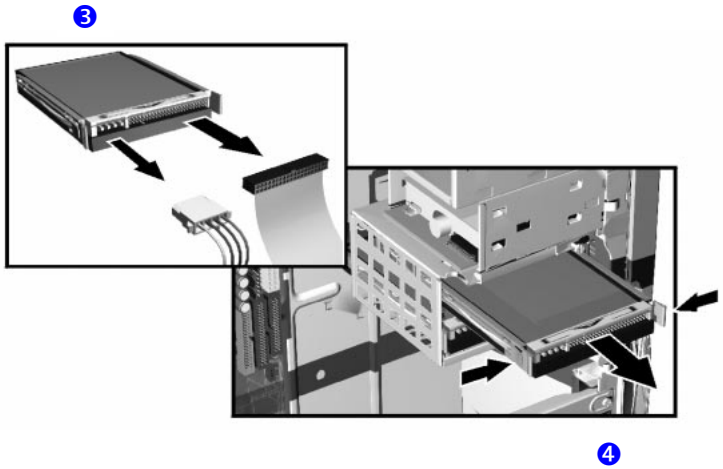
Removing the Old Drive

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 25 for instructions).

3 Disconnect the data and power cables from the hard disk drive.

4 Remove the drive. To do this, press the two front clips inward and, pushing from the rear, slide out the drive.



5 Remove the two short blue guide rails by gently prying them off the hard disk drive. These guide rails will be required for the new hard disk drive.

CAUTION

Take care when handling the hard disk drive during installation. A one-quarter inch drop can damage it.

CAUTION Configure the new hard disk drive with the same settings as the old one.

Installing the New Drive

1. Add the short blue guide rails to the new hard disk drive. Insert the guide rail labeled “L” on the left-hand side (cable connectors facing towards you and positioned at the bottom), and the guide rail “R” on the right-hand side of the hard disk drive.
2. The hard disk drive can only be inserted one way. Ensure that the data and cable connectors are facing you and positioned at the top.
3. Align the guide rails on both sides of the drive with the internal shelf guides and then slide the drive in until it clicks into position.
4. Connect the power cable and the data cable to the new hard disk drive. *The connectors are shaped to go in one way only*. If you are not sure which connector to use, refer to "Installing Mass Storage Devices", on page 32.

NOTE Avoid trapping or disconnecting the hard disk drive bay thermal sensor cable. If this cable becomes disconnected, reconnect it to the system board connector labeled **THERMAL_SENSOR** (positioned near the IDE and Floppy data cable connectors.

5. Replace the PC Workstation’s cover (refer to page 25). Reconnect all the power and telecommunications cables.
6. Turn to page 43 to complete the installation.

Installing a Second Hard Disk Drive in an Internal Shelf

The internal shelves can support two 3.5-inch devices. The master hard disk drive must be installed in the top shelf when using an IDE configuration.

To install a second hard disk drive:

1. Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.
2. Remove the PC Workstation’s cover (refer to page 25 for instructions).
3. If the primary hard disk drive is installed in the top shelf, disconnect the data and power cables.
4. Attach the short blue rails (found on the CD cage) to the new hard disk drive. Insert the guide rail labeled “L” on the left-hand side (cable connectors facing towards you and positioned at the bottom), and the guide rail “R” on the right-hand side of the hard disk drive.

5 The second hard disk drive can only be inserted one way. Ensure that the data and cable connectors are facing you and positioned at the top.

6 Align the guide rails on both sides of the drive with the internal shelf guides and then slide the drive into the bottom shelf until it clicks into position.

NOTE Avoid trapping or disconnecting the hard disk drive bay thermal sensor cable. If this cable becomes disconnected, reconnect it to the system board connector labeled **THERMAL_SENSOR** (positioned near the IDE and Floppy data cable connectors.

7 Connect the power and data cables to the second hard disk drive. Reconnect the power cables and the data cable to the primary hard disk drive.

8 Replace the PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

9 Turn to page 43 to complete the installation.

Installing a Third or a Fourth Hard Disk Drive

A third and a fourth 3.5-inch hard disk drive can be installed in the 5¼-inch front access shelves using a hard disk drive tray kit. The tray kit is supplied as an accessory and can be ordered separately.

Installing a Device in a Front Access Bay

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover and front upper bezel (refer to page 24 for instructions).

3 Depending on the device to be installed, either:

a *Remove the 5¼-inch metal filler plate.*

Through the filler plate opening located on the left-hand side of the filler plate, use your index finger to leverage the plate from the PC chassis.

b *Break off the 3½-inch metal filler plate from the PC chassis.*

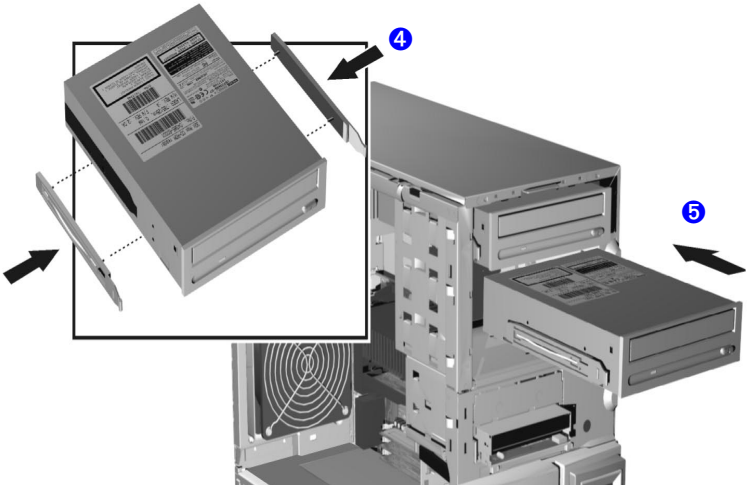
Use a screwdriver to help you to unlatch the plate. First unlatch the filler from one side, and then pull it out.

In either case, be very careful not to hurt your fingers when you remove the filler plate.

4 If you are installing a third or forth 3½-inch hard drive (the two hard drive shelves are full), use a hard disk drive tray kit to install the drive in the 5¼-inch bay (two trays are supported). Install the tray in the middle shelf of the front access cage, if it is free. Four screws are also supplied to secure the hard disk drive to the tray.

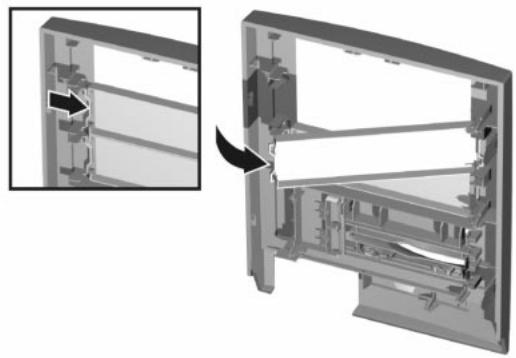
Standard 5¼-inch devices such as CD-ROM or DVD drives do not require a tray. These devices are installed using the supplied rails. Refer to the table on page 35 for more information about which rails to use with your device.

5 Align the guide rails on both sides of the drive with the internal shelf guides and then slide the drive until it clicks into position.



6 Connect the power and data cables to the installed device. *The connectors are shaped to go in one way only*. If you are not sure which connector to use, refer to "Installing Mass Storage Devices", on page 32.

7 To allow access to the device, remove the plastic filler from the cover by unclipping it on one side and pivoting it out. Store the plate in a safe place.



8 Replace the front upper bezel and PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

9 Turn to page 43 to complete the installation.

Replacing the CD-ROM Drive (or DVD-Drive)

Removing the Old Drive

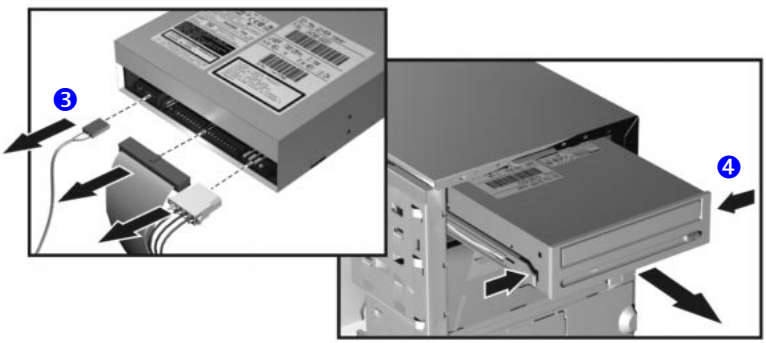
1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover and front upper bezel (refer to page 24 for instructions).

3 Disconnect the power and data cables from the old drive.

4 Remove the drive. To do this, press the two front clips inward and, pushing from the rear, slide out the drive.

5 Remove the two long green guide rails by gently prying them off the drive. These guide rails will be required for the new drive.



Installing the New Drive

1 Add the guide rails to the new drive. The guide rails are inserted in the two holes located at the bottom of the drive. There is no specific side to which these guides must be installed.

2 Align the guide rails on both sides of the drive with the internal shelf guides, then slide the drive until it clicks into position.

3 Connect the power cable and the data cable to the rear of the new drive. *The connectors are shaped to go in one way only*. If you are not sure which connector to use, refer to "Installing Mass Storage Devices", on page 32.

4 Replace the front upper bezel and PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

5 Turn to page 43 to complete the installation.

Replacing the Floppy Disk Drive

Removing the Floppy Disk Drive

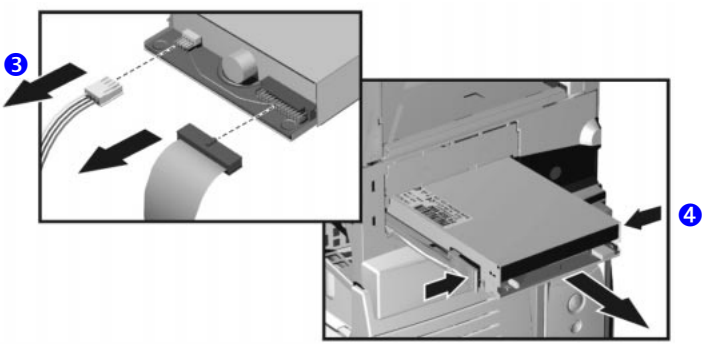
1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover and front upper bezel (refer to page 25 for these instructions).

3 Disconnect the power and data cables from the old drive.

4 Remove the drive. To do this, press the two front clips inward and, pushing from the rear, slide out the drive.

5 Remove the two short green guide rails by gently prying them off the drive. These guide rails will be required for the new drive.



Installing the Floppy Disk Drive

1 Add the short green guide rails to the new drive. Insert the guide rail labeled "L" on the left-hand side (cable connectors facing towards you and positioned at the top), and the guide rail "R" on the right-hand side of the hard disk drive.

2 Align the guide rails on both sides of the drive with the internal shelf guides, then slide the drive until it clicks into position.

3 Connect the power and data cables to the new drive and any installed drives. *The connectors are shaped to go in one way only.*

4 Replace the front bezel and PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

5 Turn to page 43 to complete the installation.

Completing the Installation of a Mass Storage Device

When an IDE Drive Is Installed

1. Switch on the computer.
2. To verify the configuration of your hard disk drive, press **F2** to enter *Setup* when the HP logo appears. Once in *Setup*, select the **Advanced** menu, then the **IDE Devices** submenu. In the **Primary Master** item, check that the details for the device have been correctly detected by the *Setup* program.
3. Press **F3** to save and exit *Setup*.
4. Refer to the operating system documentation for information on partitioning and formatting a drive.
5. If an IDE drive is removed, switch on the computer. The system BIOS will detect that the device is missing. Press **F4** to confirm that you want to remove the device. The system configuration will be updated automatically.

When a SCSI Hard Disk Drive Is Installed

1. Switch on the computer.
2. To enter the SCSI Configuration Utility press **F6** when prompted during the PC Workstation's start-up routine.
3. Verify or modify the configuration of your new SCSI hard disk drive. For more information on configuring a SCSI hard disk drive, refer to the *SCSI Administrator's Guide* available on HP's web site at **`http://www.hp.com/go/kayaksupport.`**
4. When configuration is complete, exit the SCSI Configuration Utility and re-boot the computer to save any changes.

When a CD-ROM, CD-RW or DV-Drive is Installed

1. Switch on the computer and press **F2** when the HP logo appears.
2. In the *Setup* program, select the **`Advanced`** menu, then the **`IDE Devices`** submenu. Check that the CD-ROM drive has been detected on the IDE channel.
3. Press **F3** to save and exit the program.

When a Floppy Disk Drive Is Installed

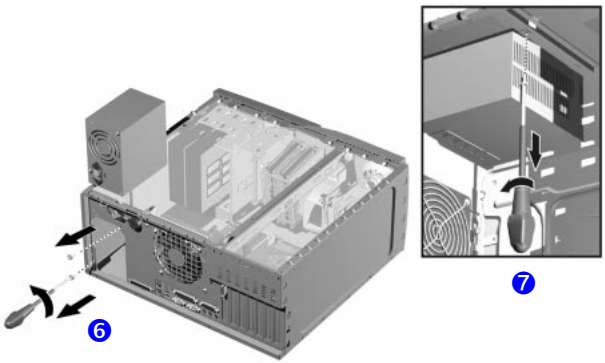
1. Switch on the computer and press **F2** when the HP logo appears.
2. In the *Setup* program, select the **`Advanced`** menu, then the **`Floppy Disk Drives`** submenu, and check that the drive has been detected.
3. Press **F3** to save and exit the program**.**

Replacing the Power Supply Unit

WARNING Hewlett-Packard does not support power supply upgrades. This information is provided to help you replace a defective power supply unit. For your safety, only replace with a power supply unit provided by HP support services.

Removing the Power Supply Unit

1. Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.
2. Remove the PC Workstation's cover (refer to page 24 for instructions).
3. Remove ***all*** internal power supply connectors.
4. Place your PC Workstation on its side with the system board facing upwards.
5. Remove the two screws located on the rear of the chassis that secure the power supply unit in position.
6. Remove the screw located inside the PC Workstation at the top of the power supply unit.
7. Push the supply unit forward until it is clear of the guide rail. Slightly tilt it towards the system board, then remove it from the chassis.



Installing the Power Supply Unit

1. Insert the new power supply unit.
2. Secure it in position using the three screws you previously removed.
3. Reconnect ***all*** internal power supply connectors.
4. Return the PC Workstation to its upright position.
5. Replace the PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

Replacing the System Board

Removing the System Board

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions).

3 To ease installation, place your PC Workstation on its side with the system board facing upwards.

4 Remove the PC chassis retaining bar.

5 Disconnect any cables attached to the system board.

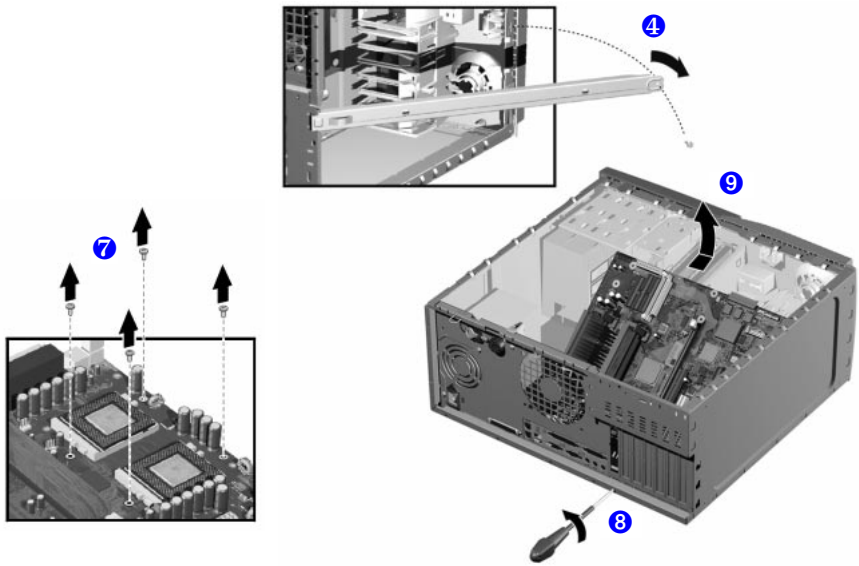
6 Remove the main memory processor and any accessory cards from the old system board (described in this chapter)

7 Remove the four screws located near the processor sockets.

8 Remove the external screw located on the rear panel near the AGP PRO slot.

9 Remove the system board, being careful not to damage the PC's rear panel connectors.

10 Unclip the retaining bracket from under the system board. This bracket must be re-installed on the new system board.



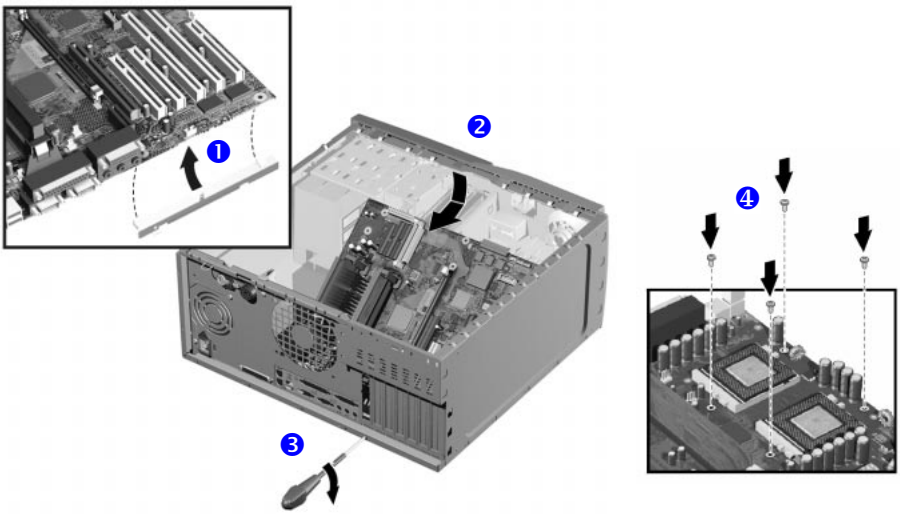
Installing the New System Board

1 Clip the retaining bracket onto the new system board.

2 Aligning the rear connectors with their corresponding sockets, insert the system board and lower it onto the guide pins. Ensure that all hooks are correctly positioned. Check that the rear connectors are correctly aligned in their sockets.

3 Tighten the screw located on the rear panel near the AGP PRO slot to secure the system board in place.

4 Attach the system board to the chassis using the four screws located near the processor sockets.



5 Reconnect any cables you disconnected earlier from the system board. To find out the positions of system board connectors, refer to the label located on the inside of the cover.

6 Replace the main memory, processor and any accessory cards in the new system board (described in this chapter).

7 Replace the retaining bar and secure it in place with the retaining screw.

8 Return the PC Workstation to its upright position.

9 Replace the PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

10 After installing the system board, you need to update your BIOS.

NOTE The latest BIOS for your PC and instructions on updating the BIOS are available from: **www.hp.com/go/kayaksupport**.

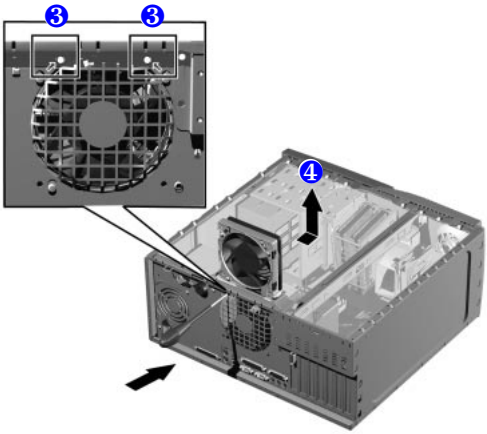
Replacing the Main Chassis Fan

Removing the Fan

1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.

2 Remove the PC Workstation's cover (refer to page 24 for instructions).

3 Holding the fan with one hand, use a screwdriver to gently push the retaining clips in the direction shown by the arrows on the chassis, then slide the fan up and out of the chassis.



4 Disconnect the fan connector from the **MAIN_FAN** socket on the system board.

Replacing the Rear Fan

1 Connect the fan connector to the **MAIN_FAN** socket on the system board.

NOTE Ensure that all cables are clear of the fan and will not easily come into contact with the fan during normal use or following transportation.

2 The fan unit can only be installed in one way. The distance between the two retaining clips is shorter at the top than the bottom. Align the fan clips with their corresponding holes.

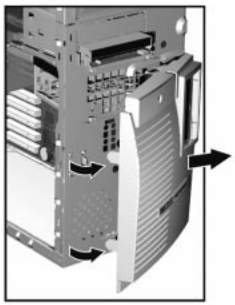
3 Gently push the fan downwards until it clicks into place.

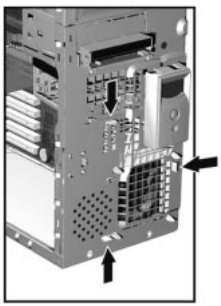
4 Replace the PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.

Replacing the Fan and Speaker Assembly

Removing the Fan and Speaker Assembly

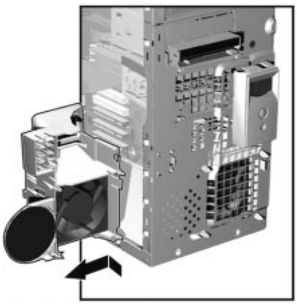
1 Switch off the display and PC Workstation. Disconnect all power cables and any LAN or telecommunications cables.
2 Remove the PC Workstation's cover and front upper and lower bezels. Refer to page 25 for these instructions.
3 Disconnect the cables from their connectors located on the system board.
4 For ease of installation, place the PC Workstation on its side with the system board facing upwards.
5 Remove the PC chassis retaining bar.
6 Remove the screw from the front of the chassis.
7 Unclip the three clips on the front of the chassis.
8 Slide the fan and speaker assembly towards the rear of the PC until it is clear of the chassis, then remove it from the PC Workstation.





Replacing the Fan and Speaker Assembly

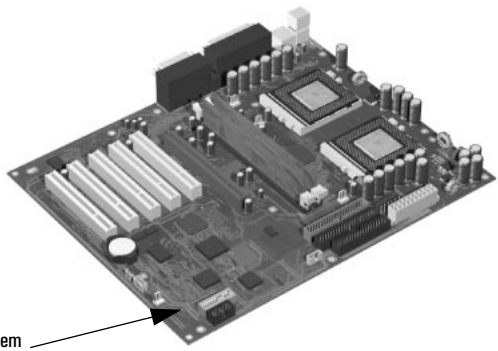
1 Place the fan and speaker assembly behind the internal shelves (the speaker should be near the bottom edge of the chassis and facing towards the front of the PC Workstation). Ensure all cables are clear of the assembly, then carefully move the fan and speaker assembly towards the front of the chassis.
2 Align the clips and guide pins with their appropriate sockets and slide the assembly forward to secure it into place.
3 Connect the fan and speaker cables to their connectors located on the system board.
4 Replace the screw on the front of the chassis.
5 Replace the retaining bar and secure it in place with the retaining screw.
6 Return the PC Workstation to its upright position.
7 Replace the front upper and lower bezels and PC Workstation's cover (refer to page 25). Reconnect all the power and telecommunications cables.



System Board Switches

There are ten system board switches used for configuration, numbered from 1 to 10. Of these a certain number are reserved and should not be modified, otherwise it could lead to a system failure.

Switch	Default Position	To Configure:
1-5	**OFF**	Reserved 1-5. **Do Not change Default Settings**
6	**ON**	Enables keyboard power-on. OFF disables this option.
7	**OFF**	Enables normal modes. ON enables the BIOS recovery mode at next boot.
8	**OFF**	Retains CMOS memory. ON clears CMOS memory at next boot.
9	**OFF**	Enables User and System Administrator passwords. ON clears the passwords at next boot.
10	**ON**	Selects the chassis type. ON = minitower



Replacing the Battery

WARNING There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. The battery is a lithium battery which does not contain heavy metals. Nevertheless, in order to protect the environment, do not dispose of batteries in household waste. Please return used batteries to the shop from which you bought them, or to the dealer from whom you purchased your PC Workstation, or to HP, so that they can be either recycled or disposed of in an environmentally sound way. Returned batteries will be accepted free of charge.

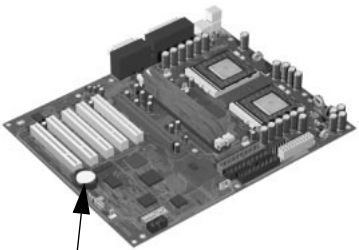
If your PC repeatedly loses its configuration settings you should consider changing the battery. Replace it with a CR2032 coin type manganese/lithium battery, available from most PC stores.

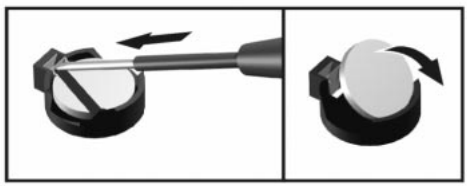
To change the battery:

1 Disconnect the PC Workstation's power supply cord and any connection to a telecommunications network.

1 Remove the PC Workstation's cover (refer to page 24).

2 Remove the old battery by sliding it from under the retaining clip(s).





3 Place the new battery in the battery holder and ensure that it is properly seated. Ensure that the clip holds the battery firmly in place.

4 Replace the PC Workstation's cover (refer to page 25). Reconnect all cables and power cords.

5 Run the *Setup* program to reconfigure the PC Workstation.

3

Troubleshooting Your HP PC Workstation

This chapter provides summary information that can help you solve problems you may have when using your PC Workstation.

- Dealing with common PC and hardware problems.
- Using HP MaxiLife to diagnose problems.
- Using HP e-DiagTools hardware diagnostics program.
- Using the HP Image Creation and Recovery CD-ROM.
- Frequently Asked Questions.
- What to do if you need more help.
- What to do before contacting HP Support.

For more detailed information, refer to the *Troubleshooting Guide*, available on HP's web site at **`http://www.hp.com/go/kayaksupport`**, then select HP Kayak XM600 from the drop-down menu.

If Your PC Does Not Start Properly

The PC Doesn't Power On	
Check that...	***How***
The PC's power cord is correctly connected.	Connect the power cord to a working grounded power outlet and the PC.

The Power-On Self Test Results In an Error The PC Doesn't Start and Makes a Noise or Beeps	
Check that...	How
The part of your configuration for which the Power-On Self Test has detected an error.	Refer to "Using HP MaxiLife to Diagnose Problems" on page 54. Refer to the *Troubleshooting Guide* available from HP's web site at: www.hp.com/go/Kayaksupport

If Your PC Has a Hardware Problem

The Monitor Doesn't Work...	
The PC's power indicator light works but the monitor remains blank.	
Check that...	***How***
There is an error message displayed on the LCD status panel.	Refer to "Using HP MaxiLife to Diagnose Problems" on page 54.
The monitor is switched ON (LED is on).	Refer to the monitor manual for an explanation of the LED signals (green, orange, or blinking).
The monitor's power cord is correctly connected.	Connect the power cord – ensure it is plugged into a working grounded power outlet and into the monitor.
The monitor's brightness and contrast settings are correctly set.	Check the settings using the monitor's OSD (on-screen display) or using controls on the front of the monitor.
You see an image during boot but then the screen goes blank	
Check that...	***How***
The monitor settings in your PC are compatible with your monitor.	• Windows NT: Enter VGA mode when prompted during start-up, then reset the resolution. • Windows 95/98: Restart the PC. When the HP screen is displayed, press **F8** and then start the PC in safe mode. Double-click on the **Display** icon in your PC's **Control Panel**, then click on the **Settings** button. Use the sliding control to reset the resolution.

The Keyboard Doesn't Work...	
Check that...	*How*
The keyboard cable is correctly connected.	Plug the cable into the correct connector on the back of the PC.
The keyboard is clean and no keys are stuck down.	Check all keys are at the same height, and none are stuck.
The keyboard itself is not defective.	Either replace the keyboard by a known working unit or try the keyboard with another PC.
If the PC starts but you still have a problem...	Run e-DiagTools. See page 59.

The Mouse Doesn't Work...	
Check that...	*How*
The mouse cable is correctly connected.	1 Switch off the PC. 2 Plug the cable into the correct connector on the back of the PC.
You are using the correct driver. If you are using HP's enhanced mouse, ensure that the correct driver is installed. This driver is delivered with the HP enhanced mouse accessory.	Download the latest drivers from HP's web at: **www.hp.com/go/kayaksupport**
The mouse is clean.	Clean the mouse ball and sensors.
The mouse itself is not defective.	Replace the mouse by a known working unit or try the mouse with another PC.
If the PC starts but you still have a problem...	Run e-DiagTools. See page 59.

The Power-On Self Test Results In an Error on HP MaxiLife Status Panel
What to do
• Refer to "Using HP MaxiLife to Diagnose Problems" on page 54. • **Press F2 to enter Setup.**[1]

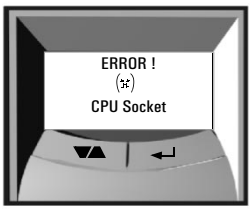
1. For more information on the *Setup* program, refer to the *Troubleshooting Guide*, available on the HP web at: **www.hp.com/go/kayaksupport.**

Using HP MaxiLife to Diagnose Problems

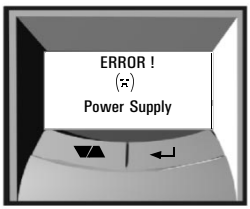
Your HP LCD can help you to diagnose problems with your PC Workstation, even when you are unable to get your system and monitor working properly.

Pre-Boot Checks

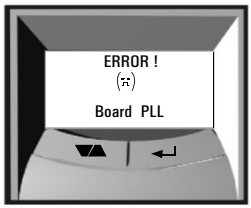
When you press your PC Workstation's on/off button, HP MaxiLife will check your system before it initiates the start-up sequence. The pre-boot diagnostic tests are run in order of priority with respect to their importance to computer functions. The first detected error displays a message on the LCD status panel. If this happens, one of the following screens could appear.



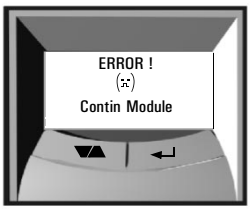
Check that the processor is correctly inserted in CPU slot.



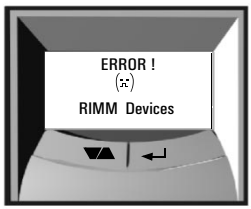
Check the power supply and power cable connections.



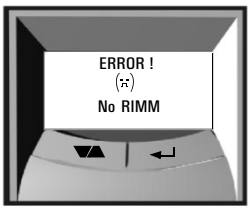
Check that the system board is connected.



Check that RDRAM continuity modules are installed.

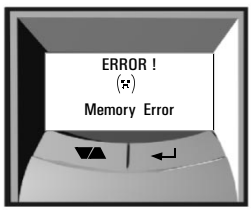


The 32 device limit per RDRAM has been exceed.



No installed RDRAM modules.

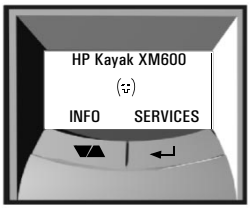
The RDRAM modules installed have incompatible speed ratings.



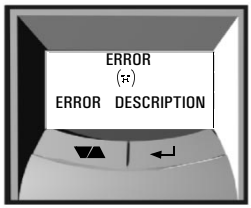
Check that the memory modules are correctly installed.

POST Phase

Following these checks, the POST (Power-On Self Test) sequence is initiated. One of the following screens will appear in this phase:



No errors occurred.



A POST error occurred. Refer to the *Troubleshooting Guide* for more information about the error description.

Other Features

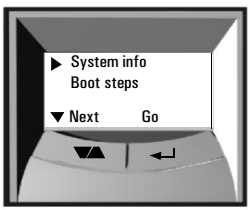
HP MaxiLife Services includes:

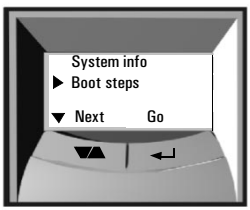
- Display the configuration details of your PC Workstation required to obtain support *(System info)*.
- Indicate POST (Power-On Self Test) steps during the power-on phase *(Boot steps)*.
- Perform diagnostic tests on your PC Workstation's various hardware components and display the results *(Diags)*.

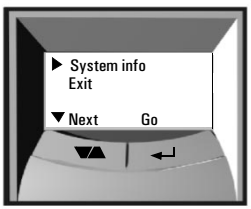
To configure your HP LCD:

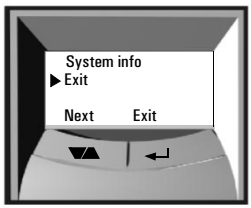
1 Ensure that your PC Workstation's power cord is connected to a grounded outlet. Power on the PC Workstation.

2 Press the LCD Service control button to access the following menus.









3 Use ▼▲ to scroll down through the menu items and ↵ to select the required menu item.

System Info.

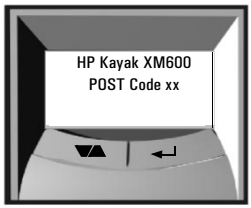
System information is displayed on the LCD one screen at a time and should detail the following:

- Product name
- BIOS version
- Serial Number
- Type & speed of processor
- Number and capacity of memory modules installed

To view these details, use the ▼▲ button to scroll through the information screens.

Boot Steps

Where available, the Boot steps option will display all POST steps the next time your PC Workstation is powered on. For support purposes, POST steps are shown as POST codes (for example, a post code = step xx in the Power-On Self Test) and displayed on the LCD as follows:



Post steps will be displayed on the LCD the next time your PC Workstation is powered on.

Diags

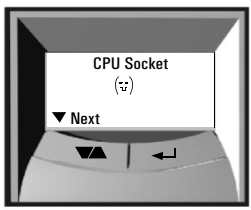
With your PC Workstation powered on, the diagnostic tests will be performed as soon as you select *Diags* from the LCD's main menu.

Tests are carried out on the following:

- CPU Socket
- Power
- Board PLL
- RAM Module

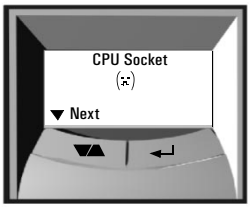
To view the test results for each system component, press the ▼▲ control button.

If no component errors are detected, the following screen will appear.



No errors were detected on the CPU socket.

If an error is detected, an error screen appears indicating the problem. To continue viewing the test results of the other system components, press the ▼▲ control button.



For example, if the processor is not correctly inserted an error screen similar to this one would appear.

When the diagnostic tests are complete, one of the following screens is displayed.

System errors were detected.

No errors were detected.

You can exit the test session by pressing the ↵ button.

Pre-Boot Diagnostics

When your PC starts up, the BIOS performs a Power-on Self Test (POST) to test your hardware configuration for any problems. If a problem is detected during the POST, an error is displayed on your PC's monitor.

If, however, your PC is unable to display an error message (for example, when you graphics controller has failed), it will emit a buzzing sound. Immediately after the buzzing sound, a series of beeps is emitted.

If you hear a series of beeps, you should count them as this will help you detect the cause of the problem.

Number of Beeps	Meaning
0	System OK
1	Processor absent, not correctly connected or ZIP socket not closed
2	Power supply is in protected mode
3	No memory, bad memory modules, incompatible memory module
4	Graphics card problem
5	PnP/PCI initialization problem
6	Corrupted BIOS. You need to activate crisis recovery procedure
7	Defective system board

Please note that for Memory (code 3), Video Card (code 4), and PnP/PCI (code 5) errors, e-Buzzer will only detect them after a 15-second timeout.

If You Miss the Beep Code

If you miss the beep code, turn off the PC by pressing the on/off power button for five seconds or more, then listen for the signal again.

HP e-DiagTools Hardware Diagnostics Utility

HP e-DiagTools is an accurate and reliable utility that helps you diagnose any potential hardware-related problems. With this utility you can:

- Check the hardware configuration and verify that it is functioning correctly.
- Test individual hardware components.
- Diagnose hardware-related problems.
- Obtain a complete hardware configuration.
- Provide precise information to an HP support agent so they can solve any problems quickly and effectively.

For more information about this utility, refer to the *e-DiagTools Hardware Diagnostics User's Guide*, available on the HP web site in PDF (Adobe Acrobat) format.

Where Can I Get HP e-DiagTools?

HP e-DiagTools is available from the following sources:

- Installed on your hard disk drive in the special "Utility" partition.
- *Image Creation and Recovery CD-ROM* delivered with your computer.
- *HP DiagTools CD-ROM* obtained from the HP web site at **`http://www.hp.com/desktops/diagtools`**

Before Using HP e-DiagTools

Decide how you are going to run the diagnostics utility: using either the utility partition on the hard disk drive or one of the CD-ROM options. Both provide the same range of extensive test but the full range of e-DiagTools features are only available when you run e-DiagTools from the hard drive. If you are running the diagnostics from a CD-ROM, then the CD-ROM drive must be configured to boot before the hard disk drive.

Starting HP e-DiagTools

From the hard disk drive:

1. Close all applications if you have not already done so.
2. Shutdown the computer with the Restart option.
3. When the Kayak start-up logo appears, the following message will be displayed for a few seconds: **`"Press <F10> to start hardware diagnostics or any other key to proceed".`**
   Press the **`F10`** key to start HP e-DiagTools.
4. When e-DiagTools starts, it will display a welcome screen. Follow the on-screen instructions to perform the diagnostic tests.

From either the *Image Creation and Recovery CD-ROM* or *HP DiagTools CD-ROM*:

1 Insert the CD-ROM into the CD-ROM drive and restart the computer.

2 Press the **F8** key to select the boot order to CD-ROM first.

3 The PC will boot from the CD-ROM.
If you are using the *Image Creation and Recovery CD-ROM*, a menu will be displayed. Select the option to run e-DiagTools.

4 When e-DiagTools starts, it will display a welcome screen. Follow the on-screen instructions to perform the diagnostic tests.

The diagnostics utility will automatically detect the complete hardware configuration of your system before any tests are performed.

Producing a Support Ticket

To produce a complete record of your system's configuration and test results, you will need to create a Support Ticket. This is a simple text file that contains essential information and is designed to assist your local or HP support agent.

If you are using HP e-DiagTools from the hard disk drive and your PC is connected to a LAN using TCP/IP (Internet) protocols, you have the option of e-mailing your Support Ticket from within e-DiagTools.

If you are using HP e-DiagTools from a CD-ROM, you can create the Support Ticket file on either the hard disk drive or floppy disk drive.

You can also view the Support Ticket file using the "Support Ticket Viewer" program.

The Support Ticket file can be easily be sent, via email or fax.

Image Creation and Recovery CD-ROM

The *PC Image Engineer — Image Creation and Recovery CD-ROM* enables you to restore your computer to its original factory configuration, change or reconfigure the operating system and reinstall drivers or other factory-supplied software components. The drivers and software utilities, including documentation and navigational aids, help you to recover either the full set of pre-loaded software or subset of it.

What Functions Are Available?

Some of the available functions on the *Image Creation and Recovery CD-ROM* are described below:

- Full Recovery: Restores the operating system, drivers, utilities and Special Disk Partition as supplied by default. A full recovery also automatically erases any viruses that might be present on the Master Boot Record. It should be noted however, that this function reformats your hard disk drive. It is highly recommended, if possible, that you save ***all*** data files and software installations.
- Minimal Recovery: Restores only the operating system and SCSI driver for access to a SCSI hard disk drive.
- Partial Recovery: Restores individual drivers which are supplied in a "browseable area" of the CD-ROM.
- Copy OS Master Files: For use when Windows prompts you to insert the operating system media when installing additional drivers.
- HP e-DiagTools: Checks the system configuration and operation. Also described on page 59.

NOTE

Some of the operations that can be performed using the *Image Creation and Recovery CD-ROM* will permanently erase the current contents of your hard disk. You should always backup your data and personal files before using the CD-ROM.

Requirements

Before performing a recovery, upgrade or downgrade, it is advisable that you make a checklist for each type of function. You will require to have the Administrator password to make any changes to the *Setup* program and it is recommended that you make a note of any changes.

Performing a Recovery, Upgrade or Downgrade

- ❒ The PC model must match the CD-ROM (the CD-ROM is locked to a specific PC model).
- ❒ Backup all data files and, if necessary, software applications.
- ❒ It is recommended upgrading to the latest BIOS version.
- ❒ *Setup* program settings: Clear any BIOS-level passwords. In the Security menu, set all Hardware Protection items to "Enabled" or "Unlocked" (if applicable). Check also that Booting from the CD-ROM is enabled; in the Boot menu, the CD-ROM drive is configured to boot before the hard disk drive in the Boot Device Priority List.
- ❒ Ensure that you have the Certificate of Authenticity from Microsoft available. (This may be a label on the side of your PC.)

Running HP e-DiagTools

- ❒ The PC model must match the CD-ROM (the CD-ROM is locked to a specific PC model).
- ❒ CD-ROM drive has been configured to boot before the hard disk drive.

Performing a Full Recovery

Depending on the hardware configuration, a full system recovery should take from 30 minutes to 2 hours.

NOTE Remember, this procedure will erase everything from the hard disk drive (primary partition if defined). Ensure that ***all*** data files and software applications have been saved.

1. Shutdown the Operating System and switch-off your PC.
2. Remove any non-standard components that were added after you received the PC to restore the PC to its original factory configuration.
3. Insert the recovery CD-ROM into the CD-ROM drive and start the PC.
4. Press the **F8** key and select the CD-ROM to boot first.
5. The computer will boot from the CD-ROM and display a DOS-style menu. Select the option to recover the hard disk drive.
   In some cases, you might have to go through the menu item "Partitioning & Formatting". In this case, there are two options:
   - Automatic (recommended).
   - Custom (for advanced users only).

   Unless you have a specific requirement, select Automatic.

6 Follow the on-screen instructions.

7 The hard disk drive will be formatted first. Several reboots will be carried out. This is normal: do not interrupt the process. Wait until a message indicates that the operation has been successfully completed.

8 Remove the recovery CD-ROM from the CD-ROM drive.

9 The operating system and drivers will be installed. In this phase, you will be required to enter the operating system settings.

Completing a Full Recovery

The full recovery function will restore the original disk image of your computer. However, it is recommended installing updated drivers which are available from the HP web site **`www.hp.com/go/kayaksupport`**

You will also be required to install drivers for any accessory boards that have been added to the original model. All data files and software applications that were saved before performing the full recovery will also need to be restored on the hard disk drive.

Minimal Recovery

To recover the operating system only, follow the instructions indicated above. In step 5, select the option to perform a minimal recovery.

The minimal recovery will install the Service Pack originally delivered with your PC. However, it is possible to uninstall it later.

If your PC Workstation does not have any SCSI drives, a message displaying “At least one service failed to start”. You can remove the driver through **`Control Panel > SCSI`**

To complete the recovery, you will need to install drivers recommended by Hewlett-Packard which are available from the HP web site, or other drivers.

Performing a Partial Recovery

Insert the recovery CD-ROM in the CD-ROM drive with the operating system running. A web browser can be used to navigate through the CD-ROM to obtain the required driver(s). You can also use Windows Explorer to browse through the driver directories.

To install a driver, follow the driver’s instructions given in the Readme file.

Frequently Asked Questions

Q: How can I reinstall my PC's operating system?
A: PC Image Engineer — Use the Image Creation and Recovery CD-ROM provided with your PC.

Q: Why is my PC running slowly/producing strange messages?
A: Your PC may have been infected by a virus. Run an antivirus utility on your PC.
If the problem continues, update your PC's BIOS. You can download the BIOS and updating instructions from **`www.hp.com/go/kayaksupport`**.
Try reducing your demands on the PC by closing applications when you are not using them. Refer to your Operating System documentation (online or paper) for information on performance monitoring.

Q: I've been experiencing problems with my PC ever since I installed some new software. What can I do?
A: Uninstall the software to see whether this solves the problem. If the problem continues, contact the software manufacturer for help or information on known compatibility problems.

Q: How do I disable the integrated sound features on my PC if I install an add-on sound card (on Windows NT, Windows 95 and Windows 98)?
A: Use the HP Setup program to disable the Audio item in the Advanced menu. Refer to "Using the HP Setup Program" on page 18.

Q: Can I use USB hardware devices with all the operating systems preloaded on my PC?
A: No. USB is supported by Windows 95, Windows 98 and Windows 2000 only.

Q: Is my PC year 2000-compliant?
A: All new HP PC Workstations are designed to handle the transition to year 2000 without any problem. For more information, refer to HP's Year 2000 web site: **`www.hp.com/year2000`**.

Q: An application says I need more free memory on my PC. How do I free memory?
A: Quit any open applications that you are not using.
Delete any unnecessary files on your hard disk.

Q: Where can I get information about the latest HP drivers?
A: **`www.hp.com/go/kayaksupport`**

Need More Help?

Refer to the *Troubleshooting Guide* for more detailed help. This manual is available from HP's web site at: **www.hp.com/go/kayaksupport**

Some Troubleshooting Tips:

- Restart your PC and see if the problem recurs.
- Run HP e-DiagTools. You can create a hardware profile of your PC (Support Ticket) that can be faxed or mailed to support. Refer to page 59 for information on using e-DiagTools.
- Visit the HP support web site **www.hp.com/go/kayaksupport** to see if you are experiencing a known problem.
- Update your PC's BIOS. The latest BIOS for your PC and instructions on updating the BIOS are available from HP's support web site at: **www.hp.com/go/kayaksupport**
- Record the details of the problem so that you can describe it accurately. Refer to page 66 for advice on what information is required.
- Think of anything you may have done recently before you first experienced the problem.
- If possible, have your system up and running and close by when you call.
- We recommend you contact your HP dealer, or contact HP support outside of peak times (mid-morning and early evening). Refer to the *HP Quick User's Guide* for more information.
  You can learn more about HP service and support from the support web site: **www.hp.com/go/kayaksupport**

Collecting Information Before Contacting HP Support

It is recommended that before contacting HP Support you note down some of the information mentioned below. This will help HP support deal with your problem quickly and efficiently:

PC Description	
Model number	See label on the right side of your PC.
Serial number	See label on the right side of your PC.
Memory • Number of megabytes installed • Is it HP supplied memory or memory from another source?	• The total amount of memory installed is displayed in the *Setup* program main menu, accessed by pressing **F2** during start-up. You can also use the *System Info* feature of HP MaxiLife to get this information (refer to "Other Features" on page 55). • There may be some compatibility problems with non-HP memory modules. HP supports and recommends only HP supplied memory modules.
Question or Problem	
Write down a brief description of the problem	
Frequency	How often has the problem occurred?
Run OK?	How long has the PC been running normally?
Recent changes to the PC	Have there been any recent changes made to the PC?
Hardware Configuration	
Which BIOS version is used?	The BIOS version is displayed in the *Setup* program main menu, accessed by pressing **F2** during start-up. You can also use the *System Info* feature of HP MaxiLife to get this information (refer to "Other Features" on page 55).
Any BIOS parameter changes?	Did the problem occur after changes were made to the BIOS using the *Setup* program?
Make a list of slots and interrupts used by additional cards (for example, LAN, sound and SCSI)	*This is to check for interrupt conflicts. You can find IRQs by running e-DiagTools (see page 59).*
Operating System	
Are you using the original operating system software that came preloaded on your PC?	
If not, what is the operating system version?	*Select Settings ➪ Control Panel from the Start menu, then click on the System icon. The operating system version is displayed under System.*
Any operating system-generated error messages?	Please note down exact text of error message.
Any errors during boot (Power-On Self Test)? This test checks all installed components.	Any POST errors will be displayed on your monitor screen or signalled by beep codes.

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